Complete Summary

GUIDELINE TITLE

Management of acute myocardial infarction in patients presenting with ST-segment elevation.

BIBLIOGRAPHIC SOURCE(S)

Van de Werf F, Ardissino D, Betriu A, Cokkinos DV, Falk E, Fox KA, Julian D, Lengyel M, Neumann FJ, Ruzyllo W, Thygesen C, Underwood SR, Vahanian A, Verheugt FW, Wijns W. Management of acute myocardial infarction in patients presenting with ST-segment elevation. The Task Force on the Management of Acute Myocardial Infarction of the European Society of Cardiology. Eur Heart J 2003 Jan;24(1):28-66. [235 references] PubMed

GUIDELINE STATUS

This is the current release of the guideline.

This guideline updates a previous version published in 1996.

COMPLETE SUMMARY CONTENT

SCOPE

DISEASE/CONDITION(S)

Acute myocardial infarction with ST-segment elevation

GUIDELINE CATEGORY

Diagnosis
Management

Risk Assessment
Treatment

CLINICAL SPECIALTY

Cardiology
Emergency Medicine
Family Practice
Internal Medicine

INTENDED USERS

Advanced Practice Nurses
Allied Health Personnel
Nurses
Physician Assistants
Physicians

GUIDELINE OBJECTIVE(S)

To present recommendations on the management of acute myocardial infarction in patients presenting with ST-segment elevation

TARGET POPULATION

Patients with acute myocardial infarction presenting with ST-segment elevation

INTERVENTIONS AND PRACTICES CONSIDERED

Diagnosis

1. Electrocardiogram (ECG)
2. Blood sampling for serum markers
3. Two-dimensional (2-D) echocardiogram
4. Myocardial perfusion scintigraphy
5. Stress testing

NOTE: The patient can proceed to stress testing when the history, ECG and serum markers are not diagnostic of acute myocardial infarction.

Emergency care treatment

1. Intravenous opioids (e.g., morphine, diamorphine)
2. Oxygen (O_2)
3. Intravenous beta-blockers or nitrates
4. Tranquiliser
5. Basic and advanced life support (e.g., cardiopulmonary resuscitation [CPR] and emergency cardiovascular care)

Pre-hospital or early hospital treatment

1. Fibrinolytic therapy (e.g., streptokinase [SK], alteplase [t-PA], reteplase [r-PA], tenecteplase [TNK-tPA])
2. Aspirin
3. Heparin
4. Percutaneous coronary interventions (PCIs)
5. Glycoprotein IIb/IIIa receptor antagonists (e.g., abciximab)
6. Coronary artery bypass surgery

Risk assessment/prognosis/prevention

1. Exercise electrocardiography
2. Myocardial perfusion scintigraphy (adenosine)
3. Stress echocardiography (vasodilator stress and dobutamine)
4. Metabolic risk marker assessment, including total, low-density lipoprotein (LDL) and high-density lipoprotein (HDL) cholesterol, fasting triglyceride and plasma glucose
5. Holter monitoring and electrophysiological studies
6. Rehabilitation programme, including physical activity
7. Smoking cessation programme
8. Dietary lipids management/advice
9. Antiplatelet and anticoagulant treatment (e.g., aspirin, clopidogrel)
10. Beta-blockers (e.g., propranolol, metoprolol, timolol, acebutolol, carvedilol)
11. Calcium antagonists (e.g., verapamil and diltiazem)
12. Angiotensin-converting enzyme (ACE) inhibitors
13. Lipid-lowering agents (e.g., statins, fibrates)
14. Nitrates (considered but not recommended)

MAJOR OUTCOMES CONSIDERED

- Time since onset of symptoms
- Complications of myocardial infarction
- Mortality (coronary and total)
- Risk of stroke
- Risk of re-infarction or re-occlusion

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

Not stated

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Weighting According to a Rating Scheme (Scheme Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Strength of evidence:

A. Data derived from at least two randomized clinical trials or meta-analyses
B. Data derived from a single randomized trial and/or meta-analysis or from non-randomized studies
C. Consensus opinion of the experts based on trials and clinical experience

METHODS USED TO ANALYZE THE EVIDENCE

Review of Published Meta-Analyses
Systematic Review with Evidence Tables

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

Not stated

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Usefulness or Efficacy of a Recommended Treatment

Class I = Evidence and/or general agreement that a given treatment is beneficial, useful and effective

Class II = Conflicting evidence and/or a divergence of opinion about the usefulness/efficacy of the treatment

IIa: weight of evidence/opinion is in favour of usefulness/efficacy

IIb: usefulness/efficacy is less well established by evidence/opinion

Class III* = Evidence or general agreement that the treatment is not useful/effective and in some cases may be harmful.

* Use of Class III is discouraged by the ESC

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

External Peer Review
Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

After several revisions of the draft guidelines, the members of the European Society of Cardiology (ESC) Task Force met August 2000 and September 2001. Specific additional contributions were obtained from K. Malmberg, H. Heidbüchel and F. Rademakers.

The document was widely circulated among experts and openly discussed with the board of the ESC and with representatives of the national societies, experts in this field, at a meeting held at the European Heart House in February 2002.

The final document was submitted to the ESC Committee for Practice Guidelines (S. Priori [Chair], V. Dean, M.A. Alonso Garcia, J.J. Blanc, A. Budaj, M. Cowie, J. Deckers, J. Lekakis, B. Lindahl, E.Fernandez Burgos, G. Mazzotta, J. Morais, A.Oto, O. Smiseth, K. H. McGregor, D. Jumeau, C. Després) for its approval in June 2002.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Some of the recommendations are followed by a class of evidence (I-III) and strength of evidence rating (A-C), the definitions of which are repeated at the end of the Major Recommendations field.

Emergency Care

Initial diagnosis and early risk stratification

A working diagnosis of myocardial infarction must first be made. This is usually based on the following criteria:

- History of chest pain/discomfort
- ST-segment elevations or (presumed) new left bundle-branch block on admission electrocardiogram (ECG). Repeated ECG recordings often needed.
- Elevated markers of myocardial necrosis (creatine kinase isoenzyme MB [CK-MB], troponins). One should not wait for the results to initiate reperfusion treatment!
- 2-dimensional (2-D) echocardiography and perfusion scintigraphy helpful to rule out acute myocardial infarction.

Relief of pain, breathlessness and anxiety

- Intravenous opioids (e.g. 4 to 8 mg morphine) with additional doses of 2 mg at 5 min intervals.
- Oxygen (O_2) (2-4 l . min^{-1}) if breathlessness or heart failure.
- Consider intravenous beta-blockers or nitrates if opioids fail to relieve pain.
- Tranquiliser may be helpful.

Pre-hospital or early in-hospital care

Reperfusion therapy

- Reperfusion therapy is indicated in all patients with a history of chest pain/discomfort of <12 hours and associated with ST-segment elevation or (presumed) new bundle-branch lock on the electrocardiogram (ECG) unless clear contraindications are present (Class I recommendation).

  Level of Evidence: A

Primary percutaneous coronary intervention (PCI)

- Preferred treatment if performed by an experienced team < 90 minutes after first medical contact (Class I recommendation).

  Level of Evidence: A

- Indicated for patients in shock and those with contraindications to fibrinolytic therapy (Class I recommendation).

  Level of Evidence: C

- Glycoprotein IIb/IIIa antagonists and primary PCI with no stenting (Class I recommendation).

  Level of Evidence: A

- Glycoprotein IIb/IIIa antagonists and primary PCI with stenting (Class IIa recommendation).

  Level of Evidence: A

Rescue PCI

- After failed thrombolysis in patients with large infarcts (Class IIa recommendation).

  Level of Evidence: B

Fibrinolytic treatment

- In the absence of contraindications (see Table 1 of the original guideline document) and if primary PCI cannot be performed within 90 minutes after

first medical contact by an experienced team, pharmacological reperfusion should be initiated as soon as possible (Class I recommendation).

Level of Evidence: A

- Choice of fibrinolytic agent depends on individual assessment of benefit and risk, availability and cost. In patients presenting late (> 4 hours after symptom onset) a more fibrin-specific agent, such as tenecteplase or alteplase is preferred (For dosages of fibrinolytic and antithrombin agents see Tables 2 and 3 of the original guideline document.) (Class IIa recommendation).

  Level of Evidence: B

- Pre-hospital initiation of fibrinolytic therapy if appropriate facilities exist (Class I recommendation).

  Level of Evidence: B

- Re-administration of a non-immunogenic lytic agent if evidence of reocclusion and mechanical reperfusion not available (Class IIa recommendation).

  Level of Evidence: B

- If not already on aspirin 150-325 mg chewable aspirin (no-enteric coated tablets) (Class I recommendation).

  Level of Evidence: A

- With alteplase and reteplase a weight-adjusted dose of heparin should be given with early and frequent adjustments according to the activated partial thromboplastin time (aPTT) (Class I recommendation).

  Level of Evidence: B

- With streptokinase heparin in optional (Class IIa recommendation).

  Level of Evidence: B

Pump failure and shock

- Diagnosis: chest x-ray, echocardiography, right heart catheterization.
- Treatment of mild and moderately severe heart failure includes:
  - Oxygen (O_2)
  - Furosemide (20-40 mg intravenously repeated at 1-4 hourly intervals as necessary)
  - Nitrates if no hypotension
  - Angiotensin-converting enzyme (ACE) inhibitors in the absence of hypotension, hypovolaemia, or renal failure
- Treatment of severe heart failure:
  - Oxygen (O_2)

    - Furosemide (see above)
    - Nitrates if no hypotension
    - Inotropic agents: dopamine and/or dobutamine
    - Haemodynamic assessment with balloon floating catheter
    - Ventilatory support if inadequate oxygen tension
    - Consideration of early revascularization
- Treatment of shock:
    - Oxygen (O_2)
    - Haemodynamic assessment with balloon floating catheter
    - Inotropic agents: dopamine and dobutamine
    - Ventilatory support if inadequate oxygen tension
    - Intraaortic balloon pump
    - Consideration of left ventricular assist devices and early revascularization

Refer to the original guideline document for discussions of mechanical complications (cardiac rupture and mitral regurgitation) and arrhythmias and conduction disturbances during the early hours after myocardial infarction.

Routine prophylactic therapies in the acute phase

Aspirin:

- Aspirin 150-325 mg (no enteric-coated formulation) (Class I recommendation).

  Level of Evidence: A

Beta-blockers:

- Intravenous beta-blocker: for all patients in whom it is not contraindicated. Oral beta-blockers (Class IIb recommendation).

  Level of Evidence: A

Angiotensin-converting enzyme (ACE) inhibitors:

- Oral formulation of ACE inhibitors on first day to all patients in whom it is not contraindicated (Class IIa recommendation).

  Level of Evidence: A

- To high-risk patients (Class I recommendation).

  Level of Evidence: A

Nitrates:

- (Class IIb recommendation).

Level of Evidence: A

Calcium antagonists:

- (Class III recommendation).

  Level of Evidence: B

Magnesium:

- (Class III recommendation).

  Level of Evidence: A

Lidocaine:

- (Class III recommendation).

  Level of Evidence: B

Refer to the original guideline document for discussions of the following topics: management of specific types of infarction, including right ventricular infarction and myocardial infarction in diabetic patients, and management of the later hospital course, including ambulation, management of specific in-hospital complications (deep vein thrombosis, intraventricular thrombus and systemic emboli, pericarditis, late ventricular arrhythmias, post-infarction angina and ischaemia).

Risk assessment, rehabilitation and secondary prevention

Refer to the original guideline document for discussions of risk assessment (timing; clinical assessment and further investigations; assessment of myocardial viability, stunning, and hibernation; and evaluation of risk of arrhythmia) and rehabilitation (psychosocial and socioeconomic aspects, lifestyle advice, and advice on physical activity).

Secondary prevention

- Stop smoking (Class I recommendation).

  Level of Evidence: C

- Optimal glycaemic control in diabetic patients (Class I recommendation).

  Level of Evidence: B

- Blood pressure control in hypertensive patients (Class I recommendation).

  Level of Evidence: C

- Mediterranean-type diet (Class I recommendation).

  Level of Evidence: B

- Supplementation with 1 g fish oil n-3 poly-unsaturated fatty acids (Class I recommendation).

  Level of Evidence: B

- Aspirin: 75 to 160 mg daily (Class I recommendation).

  Level of Evidence: A

- If aspirin is not tolerated, clopidogrel (75 mg daily) (Class IIb recommendation).

  Level of Evidence: C

- Oral anticoagulant if aspirin is not tolerated (Class IIa recommendation).

  Level of Evidence: B

- Oral beta-blockers: to all patients if no contraindications (Class I recommendation).

  Level of Evidence: A

- Continuation of angiotensin-converting enzyme inhibition started on the first day (see above) (Class I recommendation).

  Level of Evidence: A

- Statins: if in spite of dietary measures total cholesterol levels >190 mg . dl^{-1} and/or LDL-cholesterol levels of > 115 mg . dl^{-1} (Class I recommendation).

  Level of Evidence: A

- Fibrates: if HDL-cholesterol levels $\leq$ 45 mg . dl^{-1} and triglycerides $\geq$ 200 mg . dl^{-1}) (Class IIa recommendation).

  Level of Evidence: A

- Calcium antagonists (diltiazem or verapamil) if contraindications to beta-blockers and no heart failure (Class IIb recommendation).

  Level of Evidence: B

- Nitrates in the absence of angina (Class III recommendation).

  Level of Evidence: A

Recommendations on Logistics of Care

Refer to the original guideline document for discussions of logistics of care, including pre-hospital care and care in the coronary (cardiac) care unit.

Patients

Patients with a suspected heart attack have a right to expect prompt diagnosis, pain relief, resuscitation and, if indicated, reperfusion treatment.

Patients with suspected or confirmed myocardial infarction should be cared for by staff trained and experienced in modern coronary care. They should have access to advanced methods of diagnosis and treatment either at the initial place of management or following transfer to a specialist unit. They should have appropriate facilities for post-discharge follow-up, rehabilitation and secondary prevention. They and their associates should be informed of how to recognize and respond to a further heart attack.

Cardiologists

Cardiologists, in association with emergency care physicians and health authorities, should ensure that an optimal system for the care of heart attack patients is operative in their area according to local resources. At the minimum level, this should include the appropriate training of ambulance personnel and first-line doctors, efficient arrangements for the diagnosis and treatment of suspected myocardial infarctions in the emergency department, and development of critical pathways for the prompt initiation of reperfusion therapy.

Cardiologists, in association with anaesthetists and other relevant specialists, should ensure that medical and paramedical hospital staff are competent in resuscitation techniques. Registers should be kept of the time from the call for care and the administration of fibrinolytic therapy ('call-to-needle' time) and that from hospital admission to reperfusion ('door-to-needle' or 'door-to-balloon' time). The former should be no longer than 90 min and for 'fast track' patients with clear indications for reperfusion therapy, the 'door-to needle' time should not exceed 20 min and the 'door-to-balloon' time should not exceed 60 min.

Registers should also be kept of the proportion of patients with definite myocardial infarction admitted within 12 hours of the onset of symptoms with ST-segment elevation or new or presumed new left bundle-branch block who receive pharmacological and mechanical reperfusion therapy. This proportion should probably be in excess of 90%.

Percutaneous coronary intervention (PCI) is regarded as an alternative to fibrinolytic therapy when the appropriate skills and facilities are immediately available. The results of primary PCI should be recorded in local and national registers.

Most patients with an uncomplicated infarction, especially those in whom reperfusion therapy was successful, can be discharged after 4 to 5 days.

Appropriate strategies for assessment of future coronary risk should be implemented. This will normally include assessment of left ventricular function and one form of early stress testing (ECG, scintigraphy or echocardiography).

A rehabilitation programme should be made available for all patients, tailored to their individual needs.

There should be a policy for smoking cessation. This must consist of a continuing programme run by health professionals that not only encourages patients to stop, but endeavours to maintain cessation.

Records should be kept of secondary prevention therapy prescribed to survivors of definite myocardial infarction. Aspirin, beta-blockers and angiotensin-converting enzyme (ACE) inhibitors should be prescribed if no contraindications are present.

All patients should have their lipids measured, preferably on the day of admission. Those with raised lipids should first receive dietary advice. Should this fail to reduce raised lipid levels sufficiently, lipid-lowering drugs should be given, according to the criteria of the European Society of Cardiology.

General practitioners

When general practitioners are the first point of contact for cases of suspected myocardial infarction, they must either be able to respond immediately or make provision for the emergency services to do so, or (preferably) both.

If general practitioners can respond quickly and are appropriately trained and equipped, they can provide defibrillation and fibrinolysis effectively.

They should be involved in the coordinated local programme for the management of cardiac emergencies.

They should see patients as soon as possible after discharge from hospital, ensure that their rehabilitation is properly organized, and oversee the appropriate secondary prevention measures.

Health authorities

Health authorities should encourage the training of the public in basic cardiopulmonary resuscitation techniques and the ambulance personnel in basic and advanced life support.

They should ensure that an optimal system of care is available for patients suspected of sustaining cardiac arrest or myocardial infarction, by coordinating the activities of the ambulance service, general practitioners, and the hospital service.

They should ensure that emergency departments have appropriate protocols for the prompt management of patients with suspected myocardial infarction, and that there are appropriately-trained staff available at all times.

They should provide sufficient beds for the intensive care of patients with myocardial infarction. Physicians with a formal training in cardiology must be available.

They should make provision for the rehabilitation of patients discharged from hospital after myocardial infarction.

They should ensure that facilities are available in their own hospital or district for the advanced investigation and treatment of patients with the complications of myocardial infarction or, if not available locally, arrangements have been made with tertiary centres elsewhere.

Definitions:

Strength of evidence:

Level A = Data derived from at least two randomized clinical trials

Level B = Data derived from a single randomized clinical trial and/or meta-analysis or from non-randomized studies

Level C = Consensus opinion of the experts based on trials and clinical experience

Usefulness or efficacy of a recommended treatment:

Class I = Evidence and/or general agreement that a given treatment is beneficial, useful and effective

Class II = Conflicting evidence and/or a divergence of opinion about the usefulness/efficacy of the treatment

IIa: weight of evidence/opinion is in favour of usefulness/efficacy

IIb: usefulness/efficacy is less well established by evidence/opinion

Class III = Evidence or general agreement that the treatment is not useful/effective and in some cases may be harmful.

CLINICAL ALGORITHM(S)

An algorithm is provided for risk assessment after myocardial infarction.

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence is identified and graded for selected recommendations (see "Major Recommendations").

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

General benefits

- Care for patients with myocardial infarction aims to minimize the patient´s discomfort and distress and to limit the extent of myocardial damage.
- Reperfusion, including recruitment of collaterals, may save myocardium at risk from undergoing necrosis, and subcritical but persistent flow may extend the time-window for achieving myocardial salvage by complete reperfusion.

Fibrinolytic treatment

- Most benefit is seen in those treated soonest after the onset of treatment. For patients within 12 hours of the onset of symptoms of infarction, the overall evidence for the benefit of fibrinolytic treatment is overwhelming. Beyond 12 hours there is no convincing evidence of benefit for the group as a whole.

Aspirin

- Convincing evidence of the effectiveness of aspirin was demonstrated by the Second International Study of Infarct Survival (ISIS-2) trial, in which it was shown that the benefits of aspirin and streptokinase were additive.

Beta-blockers

- Pooling of 28 trials of intravenous beta-blockade reveals an absolute reduction of mortality at 7 days from 4.3% to 3.7% or six lives saved per 1000 treated.

Angiotensin-converting enzyme (ACE) inhibitors

- The Gruppo Italiano per lo Studio della Sopravvivenza nell´Infarto Miocardico (GISSI-3), ISIS-4 and Chinese Study have shown that ACE inhibitors started on the first day reduce mortality by a small but significant amount.

Subgroups Most Likely to Benefit:

Diabetic patients who sustain a myocardial infarction still have doubled mortality compared to non-diabetic patients. There are indications that patients with diabetes do not receive the same extensive treatment as non-diabetics, presumably due to fear for treatment complications. Diabetes is not a contraindication for fibrinolytic therapy, even in the presence of retinopathy. Furthermore, treatment with beta-blockers and ACE inhibitors seems to be even more effective than in non-diabetic patients and the risk for complications is negligible.

POTENTIAL HARMS

Intravenous opioids (e.g., morphine, diamorphine)

- Side effects include nausea and vomiting, hypotension with bradycardia, and respiratory depression

Fibrinolytic treatment

- Thrombolytic therapy is associated with a small but significant excess of approximately 3.9 extra strokes per 1000 patients treated with all of the excess hazard appearing on the first day after treatment. The early strokes are largely attributable to cerebral haemorrhage; later strokes are more frequently thrombotic or embolic. There is a non-significant trend for fewer thromboembolic strokes in the later period in those treated with fibrinolysis: Part of the overall excess of stroke is among patients who subsequently die and is accounted for in the overall mortality reduction (1.9 excess per 1000). Thus, there is an excess of approximately two non-fatal strokes per 1000 surviving patients treated. Of these, half are moderately or severely disabling. Advanced age, lower weight, female gender, prior cerebrovascular disease or hypertension, systolic and diastolic hypertension on admission are significant predictors of intracranial haemorrhage.
- Major non-cerebral bleeds (bleeding complications requiring blood transfusion or that are life-threatening), can occur in 4% to 13% of the patients treated. The most common sources of bleeding are procedure-related. Independent predictors of non-cerebral bleeding are older age, lower weight and female gender, also in patients not undergoing percutaneous interventions.
- Administration of streptokinase and anistreplase may be associated with hypotension, but severe allergic reactions are rare. Routine administration of hydrocortisone is not indicated. Where hypotension occurs, it should be managed by temporarily halting the infusion, laying the patient flat or elevating the feet. Occasionally atropine or intravascular volume expansion may be required.

CONTRAINDICATIONS

CONTRAINDICATIONS

Fibrinolytic therapy

- Absolute contraindications include: haemorrhagic stroke of unknown origin at any time; ischaemic stroke in preceding 6 months; central nervous system damage or neoplasms; recent major trauma, surgery, or head injury (within preceding 3 weeks); gastrointestinal bleeding within the last month; known bleeding disorders; aortic dissection.
- Relative contraindications include: transient ischaemic attack in preceding 6 months, oral anticoagulant therapy, pregnancy or within 1 week post-partum, non-compressible punctures, traumatic resuscitation, refractory hypertension (systolic blood pressure > 180 mm Hg), advanced liver disease, infective endocarditis, active peptic ulcer.

Aspirin

- Aspirin should not be given to those with a known hypersensitivity, bleeding peptic ulcer, blood dyscrasia, or severe hepatic disease. Aspirin may occasionally trigger bronchospasm in asthmatics.

QUALIFYING STATEMENTS

QUALIFYING STATEMENTS

As always with guidelines, they are not prescriptive. Patients vary so much from one another that individual care is paramount and there is still an important place for clinical judgment, experience and common sense.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

IMPLEMENTATION TOOLS

Clinical Algorithm
Personal Digital Assistant (PDA) Downloads
Pocket Guide/Reference Cards
Slide Presentation

For information about availability, see the "Availability of Companion Documents" and "Patient Resources" fields below.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Getting Better
Living with Illness

IOM DOMAIN

Effectiveness
Patient-centeredness
Safety
Timeliness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

Van de Werf F, Ardissino D, Betriu A, Cokkinos DV, Falk E, Fox KA, Julian D, Lengyel M, Neumann FJ, Ruzyllo W, Thygesen C, Underwood SR, Vahanian A,

Verheugt FW, Wijns W. Management of acute myocardial infarction in patients presenting with ST-segment elevation. The Task Force on the Management of Acute Myocardial Infarction of the European Society of Cardiology. Eur Heart J 2003 Jan;24(1):28-66. [235 references] PubMed

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

1996 (revised 2003)

GUIDELINE DEVELOPER(S)

European Society of Cardiology - Medical Specialty Society

SOURCE(S) OF FUNDING

The guidelines for the Management of Acute Myocardial Infarction in patients presenting with ST-segment elevation was financed by the budget of the Committee for Practice Guidelines of the European Society of Cardiology and was independent of any commercial, health, or governmental authorities.

GUIDELINE COMMITTEE

Task Force on the Management of Acute Myocardial Infarction

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Task Force Members: Frans Van de Werf, Chair; Diego Ardissino; Amadeo Betriu; Dennis V. Cokkinos; Erling Falk; Keith A.A. Fox; Desmond Julian; Maria Lengyel; Franz-Josef Neumann; Witold Ruzyllo; Christian Thygesen; S. Richard Underwood; Alec Vahanian; Freek W.A. Verheugt; William Wijns

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

ENDORSER(S)

Belgian Society of Cardiology - Medical Specialty Society
British Cardiac Society - Medical Specialty Society
Bulgarian Society of Cardiology - Medical Specialty Society
Czech Society of Cardiology - Medical Specialty Society
Danish Society of Cardiology - Medical Specialty Society
Estonian Cardiac Society - Medical Specialty Society
Finnish Cardiac Society - Medical Specialty Society
French Society of Cardiology - Medical Specialty Society
German Society of Cardiology - Medical Specialty Society

Hellenic Cardiological Society - Medical Specialty Society
Italian Federation of Cardiology - Medical Specialty Society
Latvian Society of Cardiology - Medical Specialty Society
Lebanese Society of Cardiology - Medical Specialty Society
Lithuanian Society of Cardiology - Medical Specialty Society
Macedonian Society of Cardiology - Medical Specialty Society
Netherlands Society of Cardiology - Medical Specialty Society
Polish Cardiac Society - Medical Specialty Society
Portuguese Society of Cardiology - Medical Specialty Society
San Marino Society of Cardiology - Medical Specialty Society
Slovak Society of Cardiology - Medical Specialty Society
Slovenian Society of Cardiology - Medical Specialty Society
Spanish Society of Cardiology - Medical Specialty Society
Swedish Society of Cardiology - Medical Specialty Society
Swiss Society of Cardiology - Medical Specialty Society
Ukrainian Society of Cardiology - Medical Specialty Society

GUIDELINE STATUS

This is the current release of the guideline.

This guideline updates a previous version published in 1996.

GUIDELINE AVAILABILITY

Electronic copies: Available from the European Society of Cardiology (ESC) Web site.

Print copies: Available from Elsevier Science Ltd. European Heart Journal, ESC Guidelines - Reprints, 32 Jamestown Road, London, NW1 7BY, United Kingdom. Tel: +44.207.424.4422; Fax: +44 207 424 4515; Web site: www.eurheartj.org.

AVAILABILITY OF COMPANION DOCUMENTS

The following is available:

- Recommendations for Task Force creation and report production. Sophia Antipolis (France): European Society of Cardiology, 2002.

  Electronic copies: Available in Portable Document Format (PDF) from the European Society of Cardiology (ESC) Web site.

- Acute myocardial infarction. Pocket guidelines. Sophia Antipolis (France): European Society of Cardiology, 2003.

  Electronic copies: An order form for ESC pocket guidelines is available in Portable Document Format (PDF) from the European Society of Cardiology (ESC) Web site. Also available for PDA download from the ESC Web site

- Guidelines on management of acute myocardial infarction in patients presenting with ST-segment elevation. Educational slides. Sophia Antipolis (France): European Society of Cardiology, 2001.

  Electronic copies: Available in Microsoft PowerPoint from the European Society of Cardiology (ESC) Web site.

PATIENT RESOURCES

None available

NGC STATUS

This summary was completed by ECRI on September 17, 2001. The information was verified by the guideline developer on September 27, 2001. This summary was updated by ECRI on April 16, 2003.

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